

WHAT PERFORMANCE BASED LOGISTICS IS AND WHAT IT IS NOT— AND WHAT IT CAN AND CANNOT DO

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Although *Performance Based Logistics (PBL) sustainment* strategies have been used successfully for the last decade, misperceptions persist. This article discusses what PBL is and is not; and what it can and cannot do for the military services, program managers, and ultimately the warfighter. PBL is not about contractors on the battlefield or outsourcing organic workload. It is about weapon system performance, readiness, best value outcomes, capability, and effective and efficient warfighter support. PBL represents a fundamental change in how DoD supports its weapon systems and ensures those systems are reliable, maintainable, and available when and where the warfighter needs them. When it comes to delivering performance outcomes: PBL works.

Keywords: *Performance Based Logistics (PBL), Performance Based Life Cycle Product Support, Sustainment, Product Support*

PBL

Performance | Based | Logistics



Performance Based Logistics (PBL) is a strategic readiness imperative. As a weapon system sustainment strategy, it is an integral mechanism by which the Department of Defense (DoD) seeks to break the stranglehold of the “death spiral,” which former Under Secretary of Defense for Acquisition, Technology, and Logistics, Dr. Jacques Gansler, warned of in his testimony to Congress earlier this decade.

Our equipment is aging. We cannot replace much of that equipment in the near future. Consequently, our Operations and Maintenance [O&M] costs will continue to escalate. This results in reduced readiness—yet at increasing costs. And, unless we reverse the trend quickly and deliberately, we face what I have described as a “death spiral”—a situation where reduced readiness requires us to keep removing more and more dollars from equipment modernization and putting it into daily O&M, thus further delaying modernization, causing the aging equipment to be over-used, further reducing readiness, and increasing O&M—a vicious circle. (Gansler, 2000, p. 68)

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**SUCCESSFUL PBL SUPPORT STRATEGIES
REPRESENT A WIN-WIN-WIN FOR THE
WARFIGHTER, ORGANIC SUSTAINMENT ORGANIZATIONS,
AND INDUSTRY PARTNERS.**

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By leveraging long-term performance based agreements and incentivizing desired outcomes using a well-crafted set of metrics, PBL can deliver substantial performance improvements for both new and legacy weapon systems over traditional “spares and repairs” sustainment models. Moreover, when these strategies are properly implemented, the resultant outcomes can often be achieved at a lower cost than otherwise attained through more traditional sustainment approaches.

Despite the fact PBL support and sustainment strategies have been successfully used by the department for almost ten years, however, misperceptions persist within the DoD acquisition, logistics, and sustainment communities as to exactly what this thing called PBL is all about. This article will qualitatively examine a range of documentation on the subject in an attempt to clarify what PBL is and is not, and perhaps just as importantly, what it can and cannot do for the department, the military services, the weapon system program manager, and ultimately the warfighter; additionally, it will examine some of the key strategic implications for the DoD logistics and sustainment community charged with supporting aging weapon systems in an increasingly austere budgetary environment.

What PBL Is

So what exactly is this thing called PBL? Simply put, PBL is:

FIRST AND FOREMOST, ABOUT SUPPORTING THE WARFIGHTER

PBL is about performance. It is about readiness. It is about enabling mission accomplishment and ensuring the warfighter has weapon systems that are available, reliable, and supportable when and where required.

A WEAPON SYSTEM SUPPORT STRATEGY

As stated in the *Defense Acquisition Guidebook*, “Performance Based Logistics (PBL) is DoD’s preferred approach for *product support* implementation (DAG, 2006, p. DAG-196). Succinctly, PBL is defined as “the purchase of support” as an integrated, affordable, performance package designed to optimize system readiness and meet performance goals for a weapon system through long-term support arrangements with clear lines of authority and responsibility” (DAG, 2006, p. DAG-196).

DoD POLICY

“PMs [Program Managers] shall develop and implement performance based logistics strategies that optimize total system availability while minimizing cost and logistics footprint” (Department of Defense [DoD], 2008, p. 7).

FOCUSED ON PERFORMANCE OUTCOMES RATHER THAN DISCRETE TRANSACTIONS

Instead of relying on a traditional “spares and repairs” sustainment model, “the essence of Performance Based Logistics is buying performance outcomes” (DAG, 2006, p. DAG-197). It is procurement of a capability to support the warfighter vs. “the individual parts or repair actions” (DAG, 2006, p. DAG-197).

A FACILITATOR OF PUBLIC-PRIVATE PARTNERING (PPP) INITIATIVES

PBL support strategies “shall include the best use of public- and private-sector capabilities through government/industry partnering initiatives, in accordance with statutory requirements” (DoD, 2003, p. 7). Successful PBL support strategies represent a win-win-win for the warfighter, organic sustainment organizations, and industry partners.

AN IMPORTANT TOOL FOR MINIMIZING LIFE CYCLE COSTS

If properly implemented, with carefully constructed and clearly understood metrics, incentive structure, financial construct, and (if appropriate) contracting strategy, “Performance Based Logistics can help program managers optimize performance and cost objectives [including] through the strategic implementation of varying degrees of Government-Industry partnerships” (DAG, 2006, p. DAG-196).

TAILORABLE TO THE UNIQUE NEEDS OF EACH INDIVIDUAL PROGRAM

“Although the fundamental concept of buying performance outcomes is common to each PBL arrangement, the PBL strategy for any specific program or commodity must be tailored to the operational and support requirements of the end item” (Defense Acquisition University [DAU], 2005a, p. 2-4). “There is no one-size-fits-all approach to PBL. Similarly, there is no template regarding sources of support in PBL strategies. Almost all of DoD’s system support comprises a combination of public (organic) and private (commercial) support sources” (DAU, 2005a, p. 2-4).

FOCUSED ON BEST VALUE, INCLUDING, BUT NOT NECESSARILY LIMITED TO LOWEST COST

“Finding the right mix of support sources is based on best value determinations of inherent capabilities and compliance with statutes and policy. This process will determine the optimum PBL support strategy within the product support spectrum, which can range from primarily organic support to a total system support package provided by a commercial Original Equipment Manufacturer (OEM)” (DAU, 2005a, p. 2-4). The exact definition of what actually constitutes a best value support solution often varies from program to program, but along with a cost component, frequently will also include some combination of performance, capability, skills, infrastructure, flexibility, quality, reliability, integration, and maintainability, among other components. Successful achievement of these best value outcomes is largely determined by the metrics and incentives identified in the PBL product support strategy.

What PBL Is Not

Conversely, there are also some things PBL cannot claim to be. For example, PBL is not:

A NEW CONCEPT OR A “FLAVOR OF THE MONTH” INITIATIVE

The roots of DoD PBL policy date back more than a decade, articulated in Section 912(c) of the National Defense Authorization Act (NDAA) for FY 1998, and the April 1998 *Secretary of Defense Report to Congress: Actions to Accelerate the Movement to the New Workforce Vision* in response to Section 912(c) of the NDAA for FY 1998. This report formed the basis for the July 1999 *Product Support for the 21st Century: Report of the Department of Defense (DoD) Product Support Reengineering Implementation Team Section 912c*; the September 2000 *Product Support for the 21st Century: A Year Later*; and the November 2001 *Product Support for the 21st Century: A Program Manager’s Guide to Buying Performance*. PBL guidance was codified in the May 2003 DoD Directive 5000.01, *The Defense Acquisition System*, and DoD Instruction 5000.02, *Operation of the Defense Acquisition System*; and supported by detailed implementation guidance contained in Chapter 5 of the *Defense Acquisition Guidebook (DAG)* in 2006, issuance of *Performance Based Logistics: A Program Manager’s Product Support Guide* in March 2005, and numerous related Office of the Secretary of Defense (OSD) and Service policies, instructions, regulations, and guidebooks. At OSD direction, DAU also created a series of PBL-related learning assets, including Continuous Learning Module (CLM 011) Performance Based Logistics (PBL); LOG 235A (now LOG 235) Web-based PBL training; LOG 235B (now LOG 236) case-based classroom PBL training; and establishment of the Web-based PBL toolkit (<https://acc.dau.mil/pbl>) in 2005.

In October 2005, “consistent with the Defense Business Board recommendation to leverage DAU to accelerate PBL implementation and to establish a DoD PBL Center of Excellence” (DAU, 2005b, p. 1), the Assistant Deputy Under Secretary of Defense, Logistics Plans and Programs designated DAU as a PBL “Center of Excellence” (DAU, 2005b, p. 1), to expand PBL learning assets, performance support, workshops, rapid deployment training, and “serve as a nexus for information cross-flow, liaison, and interface between and among the DoD components, the Defense Industry, and other Academic institutions on PBL applications and thought leadership” (DAU, 2005b, p. 1). In fact, the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics (USD[AT&L]) was so serious about PBL success, that the under secretary established an annual DoD-level awards program in 2005 to recognize outstanding system, sub-system, and component-level PBL strategies across the DoD. This compendium of policies, guidance, initiatives, training structures, and program recognition attests to the fact that PBL is clearly not a passing fad.

OUTSOURCING OR CONTRACTOR LOGISTICS SUPPORT (CLS)

To repeat: PBL is not synonymous with outsourcing or contractor logistics support. This is clearly articulated in the new December 2008 *DoD Instruction 5000.02*: “PBL offers the best strategic approach for delivering required life cycle readiness, reliability, and ownership costs. *Sources of support may be organic, commercial, or a combination* [emphasis added], with the primary focus on optimizing customer support, weapon system availability, and reduced ownership costs” (p. 29). While a majority of successful PBL Product Support Integrators (PSI) are in fact industry partners (and in many cases, the OEM), contrary to popular misconception, there is no mandate in DoD policy to use a commercial sector PSI, or even use an industry product support provider (PSP). “Part of the reason for this [mis]perception is that contractors have been effective and integral to most of the PBL strategies employed to date. PBL has not significantly changed DoD’s reliance on contractors; it has only changed the nature of how we use their services” (Fowler, 2009, p. 10).

In reality, PBL optimizes the best public- and private-sector competencies “based upon a best-value determination, evidenced through a business case analysis (BCA), of the provider’s product support capability to meet set performance objectives” (DAG, 2006, p. DAG-197). This, as expressed in the following excerpt from the *Defense Acquisition Guidebook*, is absolutely critical to understand:

This major shift from the traditional approach to product support emphasizes *how program manager teams buy support, not who they buy from* [emphasis added]. Instead of buying set levels or varying quantities of spares, repairs, tools, and data, the focus is on buying a predetermined level of availability to meet the warfighter’s objectives. (DAG, 2006, p. DAG-197)

While the authors of the *Defense Acquisition Guidebook* Chapter 5 could arguably have avoided confusion by choosing a different word such as procure or obtain, rather than ‘buy’, it is a fact that “effective PBL requires balanced contribution by both public- and private-sector providers” (Fowler, 2009, p. 10).

A PANACEA

PBL will not overcome a lack of sustainment planning, make up for an absence of effective program systems engineering, succeed with inadequate funding, mitigate the effects of poor leadership, or deliver instantaneous results. “PBL can often improve reliability, but there are limitations, particularly on legacy systems. Long-standing, systemic reliability problems in fielded systems are unlikely to be corrected without appropriate commitment of necessary funding” (L. Garvey, personal communication, November 27, 2008). The key is to establish

solid, well crafted, integrated metrics and incentives emphasizing the desired performance outcomes, most notably (but certainly not limited to) readiness, reliability, availability, maintainability, cost, and obsolescence/Diminishing Manufacturing Sources and Material Shortages (DMSMS) mitigation. To use a baseball analogy, DoD program managers and life cycle logisticians alike must recognize that ignoring early logistics design influence opportunities cannot be rescued by a PBL “diving basket catch” at the eleventh hour.

APPROPRIATE FOR EVERY SYSTEM

In some instances, particularly for legacy systems approaching retirement, PBL may in fact not be the most appropriate support solution. In other instances, the organic sector may be unable to effectively or efficiently support a system or the commercial sector may be unwilling to invest in such a strategy, judging the risks to be too great or the returns to be too inadequate. Only through a well-crafted, program-specific, and periodically updated business case analysis process can the program manager confidently make this determination.

STATIC

PBL policies, best practices, implementation strategies, and training continue to evolve as DoD and industry better understand the successes, challenges, obstacles, and issues related to PBL implementation and execution. New policy guidance was issued in a July 2008 policy memorandum by the USD(AT&L), for example, which states:

For several years, acquisition and sustainment management [has] been appropriately focused on performance-based strategies. DoD Directive 5000.1 currently recognizes performance based logistics (PBL) as a key policy principle. I direct the Secretaries of the Military Departments to continue this emphasis *with a more precise orientation on life cycle product support* [emphasis added]. PBL offers the best strategic approach for delivering readiness, reliability, and reduced ownership costs. All of the policies and directions discussed in this memorandum are enabled by effective PBL implementation. I want to emphasize that PBL is not a contracting strategy—it is indeed a strategy applicable to both private sector and DoD organic providers. To facilitate effective PBL implementation, I direct the DUSD (L&MR) [Deputy Under Secretary of Defense, Logistics and Materiel Readiness] to reflect appropriate procedural strengthening in the *Defense Acquisition Guidebook*. I further direct that all MDAPs [Major Defense Acquisition Programs] reflect PBL implementation approaches in Life Cycle Sustainment planning. (Young, 2008, p. 3)

Newly issued DoD Instruction 5000.02 language reiterates the shift in focus from (performance based) logistics to (performance based) life cycle product support, stating:

The PM shall work with the user to document performance and sustainment requirements in performance agreements specifying objective outcomes, measures, resource commitments, and stakeholder responsibilities. The PM shall employ effective *Performance Based Life Cycle Product Support* (PBL) planning, development, implementation, and management. Performance Based Life Cycle Product Support represents the latest evolution of Performance Based Logistics. “Both can be referred to as “PBL.” (DoD, 2008, p. 29)

Further emphasizing how PBL policy and practices are not static, DoD policy makers established a Product Support Assessment study team in September 2008 (DUSD[L&MR], 2008), assembling participants from across the department to examine what a next generation PBL arrangement might look like; in particular, should the PBL business model be refined? In light of current economic and DoD budget pressures, life cycle cost reductions will very likely continue to be of paramount interest in the next evolution of the PBL business model.

(NECESSARILY) A TWO-LEVEL (ORGANIZATIONAL-TO-DEPOT) MAINTENANCE STRATEGY

The operative word here is “necessarily.” While many successful PBL arrangements leverage, facilitate, or encourage a two-level maintenance strategy, a two-level maintenance strategy is not a requirement for, a definition of, or synonymous with a PBL support strategy. In fact, “many PBLs effectively (sustain) and enhance systems supported with three levels of maintenance” (L. Garvey, personal communication, November 27, 2008). This is particularly true for PBL strategies implemented for previously fielded legacy systems, which were very often developed years or even decades ago with a three-level maintenance strategy that included an intermediate level back-shop maintenance requirement.

What PBL Can Do

So what exactly can PBL do for a weapon system program manager and his or her staff? PBL can:

DELIVER HIGHLY EFFECTIVE SYSTEM, SUB-SYSTEM, OR COMPONENT SUSTAINMENT

“Performance Based Logistics, a strategy for making sure warfighters have the equipment they need when they need it, (quite simply) works. Government, industry and academic studies show PBL contracts regularly improve availability 20–40% and (reduce) costs by 15–20%” (Miller, 2008, p. 78). PBL delivers results. VADM Walter Massenberg, Naval Air Systems Command (NAVAIR) Commander clearly reiterated this point in a February 2007 memo entitled “PBL Guidance and Best Practices” where he categorically stated that “the success of Performance Based Logistics (PBL) has allowed the Naval Aviation Enterprise to improve support to the warfighter and achieve weapon system readiness at lower life cycle costs” (Massenburg, 2007, p. 1).

INCENTIVIZE DESIRED BEHAVIOR

Both NAVAIR and Naval Supply Systems Command (NAVSUP) have experienced substantial success in implementing PBL arrangements. Their philosophy is simple: The Navy buys [a] comprehensive performance package... not individual parts. This approach totally reverses [the] vendor incentive. Fixed price “pay for performance” contracts motivate [the] vendor to reduce failures/consumption, [while] a long-term commitment enables [the] vendor to balance risk versus investments. [This in turn] improves parts support (Material Availability increases and Logistics Response Time [LRT] decreases, resulting in improved readiness); optimizes depot efficiency by reducing Repair Turn Around Times (RTAT), Awaiting Parts (AWP), and Work in Process (WIP); [incentivizes] investments in reliability, [resulting in] Mean Time Between Failures (MTBF) [improvement]; and shortstops failures [in turn] reducing off-station demand (Garvey, 2004).

HELP THE PM STREAMLINE SUPPORT STRATEGY DEVELOPMENT

Randy Fowler (2009) described the properties of PBL in their most fundamental sense:

PBL, with its outcome-focused principles, metrics, and incentives, serves as a simplifying strategy for the PM. PBL offers a one-stop approach for the PM to perform effectively as the life cycle manager. PBL is the best enabler of the total life cycle systems management concept; it provides

a means for the resource-constrained program management office to develop, implement, and manage the sustainment of a system over its life cycle. (p. 12)

BE APPLIED FLEXIBLY DEPENDING ON A PROGRAM'S UNIQUE NEEDS

Application of "Performance Based Logistics strategies may be at the system, subsystem, or major assembly level depending on program unique circumstances and appropriate product support strategy analysis" (DAG, 2006, p. DAG-177).

SERVE AS A CRITICAL TOOL IN THE TOOLKIT FOR PROACTIVELY MITIGATING DMSMS AND OBSOLESCENCE ISSUES

PBL offers an effective way to deal with obsolescence throughout the life of a product. Unlike traditional approaches to modernizing legacy systems, PBL holistically manages the product support of weapon systems, assemblies, subassemblies, and components. As the point of responsibility for meeting performance requirements, as outlined in the Performance Based Agreement, shifts to the Product Support Integrator (PSI) under the Program Manager, PBL provides a powerful tool for mitigating obsolescence and making continuous modernization (CM) a reality for current weapon systems, assemblies, subassemblies, and components (where a PBL application is feasible). PBL clearly fulfills the need for CM and obsolescence mitigation. (DoD, 2006, p. 2-1)

SERVE AS AN IMPORTANT ENABLER OF AN EFFECTIVE, END-TO-END SUPPLY CHAIN

"Performance Based Logistics enables the program manager to exploit supply chain processes and systems to provide flexible and timely materiel support response during crises and joint operations" (DAG, 2006, p. DAG-184).

A Supply Chain Management (SCM) strategy is critical to the success of any PBL effort. Materiel support is a critical link in weapons systems supportability....Supply chain management includes the distribution, asset visibility, and obsolescence mitigation of the spare parts. From a warfighter's perspective, transportation and asset visibility have a substantial impact on high-level metrics and should be emphasized in the PBL strategy. (DAU, 2005a, pp. 3-7, 3-8)

POWERFULLY INCENTIVIZE THE WEAPON SYSTEM PSI TO INVEST IN MAJOR RELIABILITY, AVAILABILITY, AND MAINTAINABILITY INITIATIVES

Substantial improvements in system and subsystem reliability, time-on-wing, and operational availability have been seen on a variety of programs which have implemented PBL support strategies.

PBL inherently self-motivates service providers to do “good things,” such as improve component and system reliability, since it provides the foundation for increased profit. However, this motivation must be balanced against the ability of the service provider to invest in the needed infrastructure and processes required to achieve reliability improvements. (DAU, 2005a, p. 3-10)

What PBL Cannot Do

On the other hand, however, PBL cannot be all things to all people (or all programs). It cannot, for example:

OVERCOME POOR SUSTAINMENT PLANNING, LACK OF ADEQUATE TRAINING, OR A MISREPRESENTATION OF WHAT PBL IS

Kate Vitasek and Steve Geary (2008) examined the reasons why some managers fail to implement PBL successfully and came to the following conclusion:

Most thought leaders agree that the PBL business model works, but not all programs have lived up to the success they hoped to achieve. Why is this? Many point to poor application of the PBL concepts.

A report of the Acquisition Advisory Panel sums it up best: ‘When individuals without the proper training and experience attempt to implement a performance-based contract, the results are understandably and expectedly poor...there is trouble consistently implementing it by an inconsistently trained workforce. (p. 64)

RELIEVE THE PROGRAM MANAGER OF HIS OR HER RESPONSIBILITIES AS LIFE CYCLE MANAGER FOR THE SYSTEM

“The Program Manager [is] charged with responsibility for supporting the entire system....The scope of support accountability for a PM never varies—they are responsible for supporting the entire system” (Cothran, 2007, p. 3).

Conclusions

In conclusion, it is important to understand what PBL is and is not. Additionally, while there are many things PBL can and cannot do, it remains firmly entrenched as a major initiative and part of the acquisition process. Randy Fowler (2009), in an article published in the Defense Acquisition University's *Defense AT&L* periodical, made the case for PBL's contribution to the acquisition process:

The evidence is clear: PBL works. PBL delivers dramatic improvements in performance with lower operating costs across the total life cycle. PBL does more for the warfighter with less from the taxpayer. Instead of paying for transactional activities, the government and industry partners deliver improved performance at lower costs. (p. 13)

At the end of the day, PBL is not about contractors on the battlefield, outsourcing, degrading organic workforce expertise, or taking workload away from organic maintenance depots. It is about weapon system performance. It is about readiness, best value outcomes, capability, and providing effective and efficient support for the warfighter. PBL represents a fundamental change in how DoD supports its weapon systems and ensures those systems are reliable, maintainable, and perhaps most importantly, available when and where the warfighter needs them, in the most cost-effective manner possible. Ultimately, this is what PBL can—and must continue to do—for our warfighters and our nation.

Author Biography



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REFERENCES

- Cothran, J. (January, 2007). The product support integration function in a performance based logistics strategy. *The RMS Partnership Newsletter*. Retrieved August 31, 2009, from <http://www.rmspartnership.org/Newsletters/RMSNewsletterJan07.pdf>
- Defense acquisition guidebook (DAG). (2006). Vienna, VA: Management Concepts.
- Defense Acquisition University (DAU). (2005a, October 14). *Memorandum of Understanding between Defense Acquisition University (DAU) and the Assistant Deputy Under Secretary of Defense, Logistics Plans and Programs*. Fort Belvoir, VA: Author.
- Defense Acquisition University (DAU). (2005b, March). *Performance based logistics: A program manager's product support guide*. Fort Belvoir, VA: DAU Press.
- Department of Defense. (2003, May 12). *The Defense acquisition system* (DoDD 5000.01). Certified current as of November 20, 2007. Office of the Under Secretary of Defense, Acquisition, Technology and Logistics. Retrieved August 20, 2009, from <http://www.dtic.mil/whs/directives/corres/pdf/500001p.pdf>
- Department of Defense. (2006, November 1). *Diminishing Manufacturing Sources and Material Sources and Material Shortages: A guidebook of best practices and tools for implementing a DMSMS management program (SD-22)*. Defense Standardization Program Office. Retrieved September 11, 2009, from http://www1.dau.mil/pubscats/PubsCats/SD-22_FINAL%20low-res.pdf
- Department of Defense. (2008, December 8). *Operation of the defense acquisition system*. Office of the Under Secretary of Defense, Acquisition, Technology and Logistics. Retrieved August 20, 2009, from <http://www.dtic.mil/whs/directives/corres/pdf/500002p.pdf>
- Deputy Undersecretary of Defense, Logistics & Materiel Readiness (L&MR). (2008, September 5). *Product support assessment team*. Memorandum. Washington, DC: Author.
- Fowler, R., (2009, January–February). Misunderstood superheroes: Batman and performance based logistics. *Defense AT&L Magazine*, 38(1), 8–13.
- Gansler, J. S. (2000, September–October). Gansler testifies before Congress on transformation of DoD logistics. Statement before the House Armed Services Committee Readiness Subcommittee Logistics Transformation Hearing held June 27, 2000. *Program Manager*, 29(5), 68–69.
- Garvey, L. (2004, November 17). Naval Inventory Control Point (NAVICP) PBL perspective. Presentation to Defense Acquisition University LOG: *Navy Success with PBL*. PowerPoint Presentation to the LOG 235B Class, Slide 29.
- Massenburg, W. B. (2007, February 13). *Performance based logistics (PBL) guidance and best practices*. Patuxent River, MD: Naval Air Systems Command.
- Miller, A. (2008, November 3). Performance-based logistics works. *Aviation Week & Space Technology* 169(17), 78.
- National Defense Authorization Act for Fiscal Year 1998. (1998). Enacted by the Senate and House of Representatives 105th Congress of the United States of America (H.R. 1119 § 912c). Retrieved September 15, 2009, from http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=105_cong_bills&docid=f:h1119enr.txt.pdf
- Office of the Secretary of Defense (OSD). (1998, April 1). *Actions to accelerate the movement to the new workforce vision*. Secretary of Defense Report to Congress. Washington, DC: Author.
- Office of the Under Secretary of Defense for Acquisition, Technology, & Logistics (USD[AT&L]). (2000, September). *Product support for the 21st century: A year later*. Washington, DC: Author.
- Vitasek, K., & Geary S. (2008, June 3). Performance-based logistics redefines Department of Defense procurement." *World Trade Magazine*. Retrieved August 31, 2009, from <http://thecenter.utk.edu/images/Users/1/PBL/O62Feature7Performance-3.pdf>
- Young, J. (2008, July 31). *Implementing a Life Cycle Management Framework* (Policy Memorandum). Washington, DC: Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics.